

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A lapping apparatus comprising:
a lapping film;
a film feeder configured to feed the film;
a first drive configured to rotate a work;
a second drive configured to move the work relative to the film;
a shoe set comprising a first shoe of a width and a second shoe of the same width spaced apart from each other by a distance of the width times an integer;
wherein the film feeder is configured to feed the film by an amount of the width;
a shoe set handler configured to handle the shoe set to press the film against the work;
and
a deterioration delayer configured to delay an abrasivity deterioration of the film.
2. (Withdrawn – Currently Amended) The lapping apparatus as claimed in claim 1, ~~wherein the shoe set comprises a first shoe of a width, and a second shoe of the width at a distance of the width times an integer from the first shoe, and the deterioration delayer comprises a controller configured to control the film feeder to feed the film by an amount at a distance of the width.~~
3. (Withdrawn) The lapping apparatus as claimed in claim 2, wherein the shoe set comprises a number of shoes equal to the integer.
4. (Withdrawn) The lapping apparatus as claimed in claim 2, wherein
the shoe set comprises a first shoe set, and a second shoe set, and
the deterioration delayer comprises a detector configured to detect a condition of an abrasive face of the film between the first shoe set and the second shoe set, and
the controller is configured to control the film feeder in dependence on the condition detected by the detector.

5. (Original) The lapping apparatus as claimed in claim 1, wherein the shoe set comprises a first shoe set, and a second shoe set, and the deterioration delayer comprises a cleaner configured to clean an abrasive face of the film between the first shoe set and the second shoe set.

6. (Withdrawn) The lapping apparatus as claimed in claim 5, wherein the deterioration delayer comprises a film warper configured to warp the film with the abrasive face outside.

7. (Withdrawn) The lapping apparatus as claimed in claim 5, wherein the cleaner comprises an ultrasonic brush.

8. (Withdrawn) The lapping apparatus as claimed in claim 5, wherein the cleaner comprises an ultrasonic bath.

9. (Original) The lapping apparatus as claimed in claim 5, wherein the cleaner comprises a jet nozzle.

10. (Withdrawn) The lapping apparatus as claimed in claim 5, wherein the film comprises a flexible and non-expansive substrate.

11. (Withdrawn - Currently Amended) The lapping apparatus as claimed in claim 1, wherein ~~the shoe set comprises a first shoe, and a second shoe, and~~ the deterioration delayer comprises a first detour provider configured to provide the film with a first detour defining a first space between the first shoe and the second shoe, and a lubricant supplier configured to supply a lubricant to the first space.

12. (Withdrawn) The lapping apparatus as claimed in claim 11, wherein the film comprises a flexible and non-expansive substrate.

13. (Withdrawn – Currently Amended) The lapping apparatus as claimed in claim 11, wherein the shoe set comprises a third shoe,

the deterioration delayer comprises a second detour provider configured to provide the film with a second detour defining a second space between the second shoe and the third shoe, and

the lubricant supplier is configured to supply the lubricant to the second space.

14. (Withdrawn) The lapping apparatus as claimed in claim 11, wherein the first detour provider comprises a tension roller configured for the first detour to detour therearound, and a bias element configured to bias the tension roller in a detoured direction of the first detour.

15. (Withdrawn) The lapping apparatus as claimed in claim 14, wherein the tension roller is rotatable.

16. (Withdrawn) The lapping apparatus as claimed in claim 11, wherein the deterioration delayer comprises a shoe case having a first support part configured to support the first shoe, and a second support part configured to support the second shoe, the first and second support parts extending in radial directions of the work defining therebetween a slot configured to accommodate the first detour and the first detour provider resiliently suspended from the shoe case.

17. (Withdrawn) The lapping apparatus as claimed in claim 16, wherein the lubricant supplier comprises a network of lubricant paths formed in the shoe case and communicating with the first space.

18. (Withdrawn) The lapping apparatus as claimed in claim 11, wherein the lubricant supplier is configured to deliver the lubricant from around the first detour provider.

Claims 19 – 24 (Canceled).

25. (Withdrawn) The lapping apparatus as claimed in claim 1, wherein the deterioration delayer comprises a film detector configured to detect a condition of an abrasive face of the film, and a controller configured to control one of the film feeder and the shoe set handler depending on the condition detected.

26. (Withdrawn) The lapping apparatus as claimed in claim 25, wherein the condition detected comprises a projection of an abrasive particle of the abrasive face.

27. (Withdrawn) The lapping apparatus as claimed in claim 25, wherein the deterioration delayer comprises a truer configured to true the abrasive face depending on the condition detected.

28. (Withdrawn) The lapping apparatus as claimed in claim 25, wherein the film detector is configured to detect the condition of the abrasive face before a lapping service.

29. (Withdrawn) The lapping apparatus as claimed in claim 25, wherein the film detector is configured to detect the condition of the abrasive face after a lapping service.

Claims 30 - 34 (Canceled).

35. (Withdrawn) The lapping apparatus as claimed in claim 1, wherein the deterioration delayer comprises a blocking delayer configured to delay a blocking of the film.

36. (Currently Amended) A lapping apparatus comprising:
a lapping film;
film feeding means for feeding the film;
first drive means for rotating a work;
second drive means for moving the work relative to the film;
a shoe set comprising a first shoe of a width and a second shoe of the same width spaced apart from each other by a distance of the width times an integer;
wherein the film feeding means is configured to feed the film by an amount of the width;
shoe set handling means for handling the shoe set to press the film against the work;
and
deterioration delaying means for delaying an abrasivity deterioration of the film.

37. (Withdrawn – Currently Amended) A lapping method comprising:
feeding a lapping film;
rotating a work;
moving the work relative to the film;
handling a shoe set to press the film against the work, wherein the shoe set comprises a first shoe of a width and a second shoe of the same width spaced apart from each other by a distance of the width times an integer;
feeding the film by an amount of the width; and
delaying an abrasivity deterioration of the film.

Claim 38 (Canceled).

39. (Withdrawn – Currently Amended) The lapping method as claimed in ~~claim 38~~ claim 37, wherein the shoe set comprises a number of shoes equal to the integer.

40. (Withdrawn – Currently Amended) The lapping method as claimed in claim 37, wherein

the shoe set comprises a first shoe set, and a second shoe set, and
the delaying comprises detecting a condition of an abrasive face of the film between the first shoe set and the second shoe set, and
the feeding depends ~~controlling comprise depending on~~ the condition detected.

41. (Withdrawn) The lapping method as claimed in claim 37, wherein
the shoe set comprises a first shoe set, and a second shoe set, and
the delaying comprises cleaning an abrasive face of the film between the first shoe set and the second shoe set.

42. (Withdrawn – Currently Amended) The lapping method as claimed in claim 37, wherein ~~the shoe set comprises a first shoe, and a second shoe, and~~ the delaying comprises providing the film with a detour defining a space between the first shoe and the second shoe, and supplying a lubricant to the space.

Claim 43 (Canceled).

44. (Withdrawn) The lapping method as claimed in claim 37, wherein the delaying comprises detecting a condition of an abrasive face of the film, and controlling one of feeding and handling depending on the condition detected.

Claim 45 (Canceled).